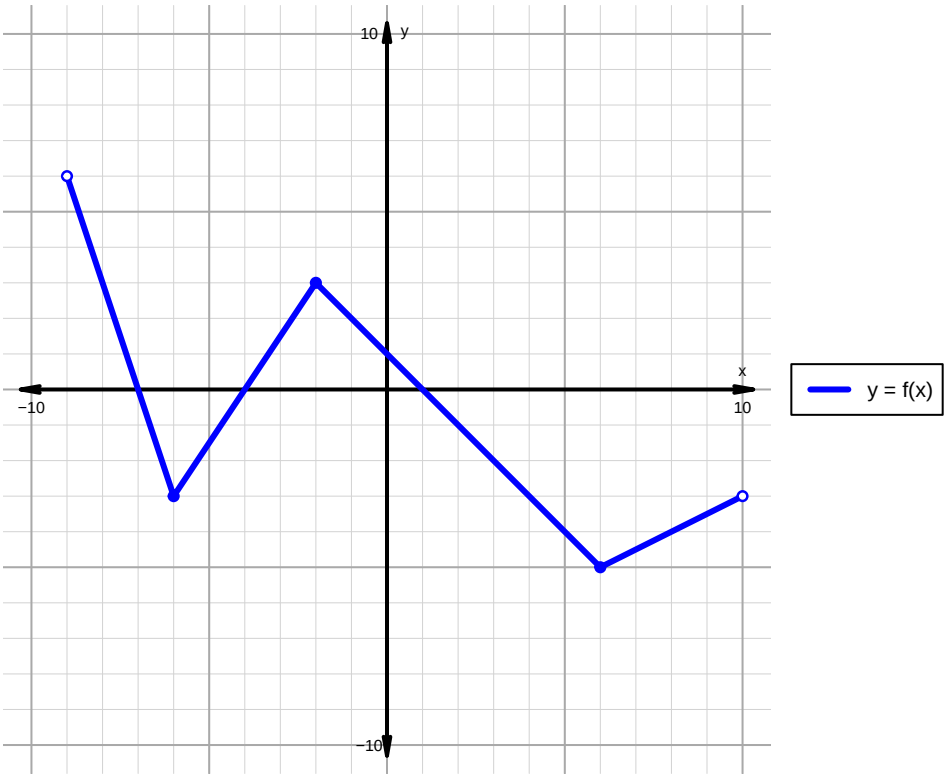
Name: Date:

Intervals, Transformations, and Slope Solution (version 43)

1. The function f is graphed below.

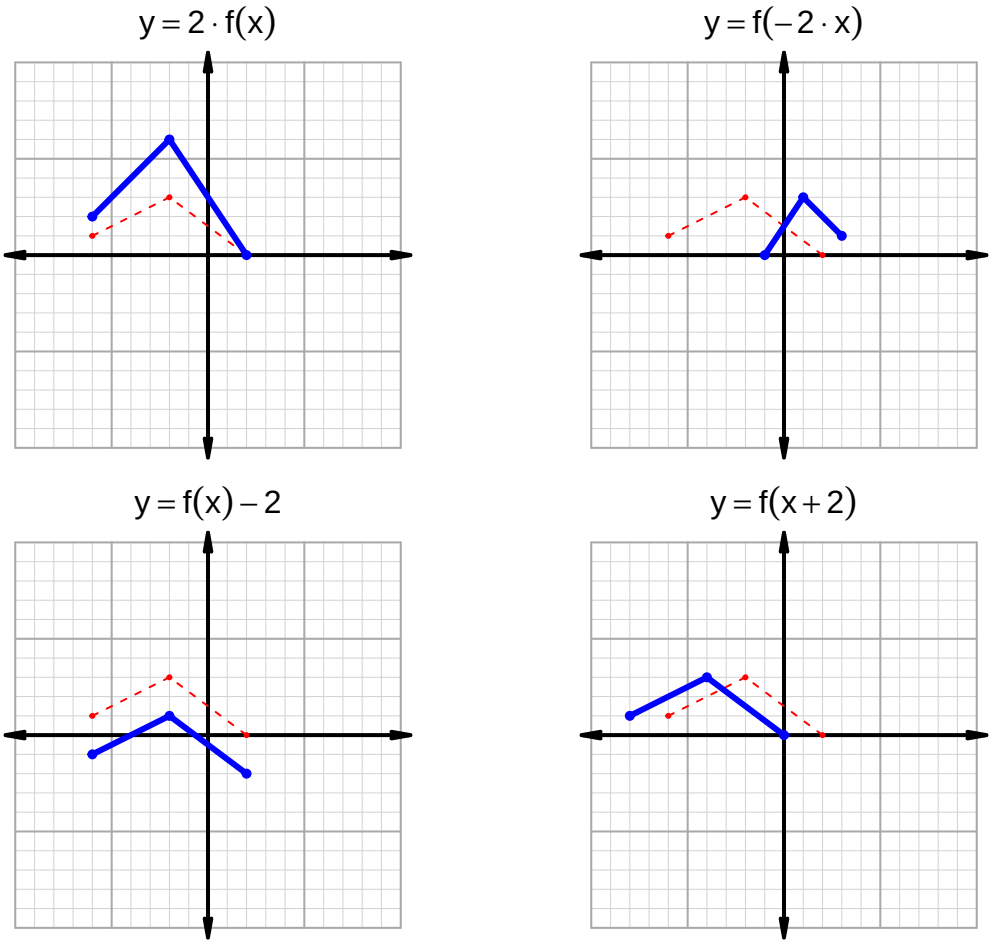


Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-7)\cup(-4,1)$
Negative	$(-7,-4)\cup(1,10)$
Increasing	$(-6,-2)\cup(6,10)$
Decreasing	$(-9,-6)\cup(-2,6)$
Domain	$(-9,10)$
Range	$(-5,6)$

Intervals, Transformations, and Slope Solution (version 43)

2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 44$ and $x_2 = 56$. Express your answer as a reduced fraction.

x	$g(x)$
33	56
44	33
56	60
60	44

$\frac{f(56)-f(44)}{56-44} = \frac{60-33}{56-44} = \frac{27}{12}$

The greatest common factor of 27 and 12 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{9}{4}$$